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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,037	05/11/2001	Michael D. Lock	40175	5096

7590 01/13/2005
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EXAMINER

ALAVI, AMIR

ART UNIT PAPER NUMBER

2621

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/853,037	Applicant(s) LOCK ET AL.	
	Examiner Amir Alavi	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12-21 and 25-33 is/are rejected.
- 7) ☒ Claim(s) 6-11 and 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

- Applicant's arguments filed 24, August 2004 have been fully considered but they are not persuasive.
- Applicant argues in essence that the cited prior art, namely, Lock (USPN-6,014,904), does not disclose a two dimensional histogram; and that Lu (USPN-6,317,517 B1), requires density estimation on every point in a data set.
- Examiner disagrees and indicates that the cited prior art reasonably address limitations of the claimed invention. Applicant is reminded that Examiner will interpret each claim in the broadest reasonable sense, as such, the claims and only the claims form the metes and bounds of the invention. In this regard, wherein Figures 3A and 3B, of Lock reference are clearly indicative of two dimensions, as each bin is represented by coordinates of x and y components. With respect to the Lu reference, as he discloses on column 3, line 39, "the density estimation is completely driven by the training data", that is, the training data can be of any sort, this clearly equates claimed invention's of, "determining a density estimate based on said bins".

Claim Rejections - 35 USC § 103

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- Claims 1-5, 12-21 and 25-33 are rejected under 35 U.S.C. 103(a) as being obvious over Lock (US 6,014,904) in view of Lu (US 6,317,517 B1).
- While Lock does qualify as prior art under 35 U.S.C. 102(e), Lock also qualifies as prior art under 35 U.S.C. 102(a), and therefore cannot be excluded from consideration under the provisions of 35 USC 103(c).

Regarding claim 1, Lock, discloses: generating a two-dimensional histogram (Please note, figures 3A and 3B, in correlation to column 3, lines 63-67 and column 4, lines 1-7. As shown in figure 3B, a histogram having two dimensions) characterized by a grid having an x-axis and a y-axis (As shown in figure 3B, having an

x-axis and a y-axis) and a selected number of bins in the x-direction and a selected number of bins in the y-direction (As shown in figure 3B, the histogram is consisted of bins in x and y directions), said data comprising n pairs of points (x_i, y_i) , $i=1, \dots, n$ (As shown in figure 3A, the data is consisted of many points, that is, n points), said histogram comprising fewer bins than said points (As seen in the comparison of figures 3A and 3B, the number of bins of the histogram in figure 3B is less than the number of data points in figure 3A) and identifying at least one cluster in said data (Please note, column 3, lines 64-65).

However, Lock, does not specifically disclose wherein determining a density estimate.

On the other hand, Lu, in the same field of endeavor discloses wherein determining a density estimate (Please note, column 3, line 39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize this density estimation of Lu in Lock's invention, because as Lu, on column 3, lines 37-38, discloses that such utilization causes all components to be treated uniformly and democratically and without any bias.

Regarding claim 2, Lu, discloses, wherein said determining step comprises generating a smoothed density estimate. (Please note, column 3, line 40. As indicated a smoothing parameter h).

Regarding claim 3, Lu, discloses, wherein said smoothed density estimate is generated using a Gaussian Kernel estimator algorithm. (Please note, column 3, line 37. As indicted the utilization of a Gaussian Kernel).

Regarding claim 4, Lock, discloses wherein a boundary around said at least one cluster. (Please note, figure 1, in correlation to column 4, lines 2-4. As indicated a geometric boundary on the two-dimensional scatter plot so as to enclose a group of the displayed particles in a data cluster).

Regarding claim 5, Lock, discloses wherein said boundary is a polygon characterized by a plurality of vertices, and further comprising processing said boundary to reduce the number of said vertices while enclosing approximately the same area within said boundary. (Please note, figure 1, in correlation to column 4, lines 5-7. As indicated the boundary having a polygonal shape defined by a plurality of vertices about at least one cell cluster created by building at least one histogram from cross sections of the two-dimensional scatter plot).

Regarding claim 12, arguments analogous to those presented for claims 1 and 4 are applicable.

Regarding claims 13-14, arguments analogous to those presented for claims 2-3, respectively, are applicable.

Regarding claim 15, arguments analogous to those presented for claim 5 are applicable.

Regarding claim 16, arguments analogous to those presented for claim 1 are applicable.

Regarding claims 17-21, arguments analogous to those presented for claims 1-5, respectively, are applicable.

Regarding claim 25, arguments analogous to those presented for claims 1 and 4 are applicable.

Regarding claims 26-27, arguments analogous to those presented for claims 2-3, respectively, are applicable.

Regarding claim 28, arguments analogous to those presented for claim 1 are applicable.

Regarding claim 29, arguments analogous to those presented for claims 1 and 4 are applicable.

Regarding claims 30-31, arguments analogous to those presented for claims 2-3, respectively, are applicable.

Regarding claims 32, arguments analogous to those presented for claim 5 are applicable.

Regarding claims 33, arguments analogous to those presented for claim 1 are applicable.

Allowable Subject Matter

- Claims 6-11 and 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- The following is a statement of reasons for the indication of allowable subject matter: None of the prior art disclose or fairly suggest wherein said data comprises a plurality of clusters and said density estimate is characterized by a three-dimensional plot depicting peaks and valleys, said identifying step comprising locating valleys in said density estimate and identifying each of said plurality of clusters as being separated from the others by at least one of said valleys.

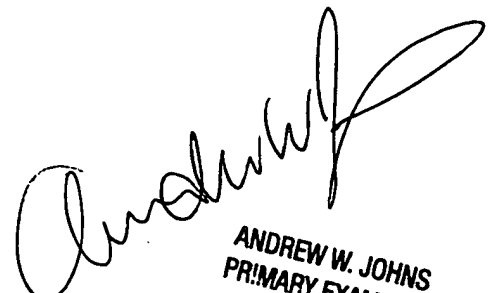
Conclusion

- **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
- A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

- Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amir Alavi whose telephone number is 703-306-5913.
- The examiner can normally be reached on Mon-Thu.. 8:00 am thru 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo Boudreau can be reached on 703-305-4706.
- The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.
- For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AA
Group Art Unit 2621
05 January 2005



ANDREW W. JOHNS
PRIMARY EXAMINER